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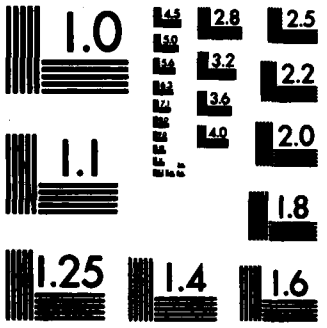

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Research during this period has resulted in the development of algorithms for perceptual segmentation of the most basic of the texture representations - the dot pattern representation. Segmentation is based on a variety of perceptual grouping criteria, including dot density, magnitude and direction of density gradients, and shape characteristics of the segments.

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We have developed algorithms for perceptual segmentation of the most basic of the texture representations - the dot pattern representation. Segmentation is based on a variety of perceptual grouping criteria. Among them are dot density, magnitude and direction of density gradients, and shape characteristics of the segments. Segmentation is carried out in two phases. In the first phase, the lowest level perceptual groupings are obtained based upon local criteria. This consists of three independent and parallel processes the results of which are fed to a fourth process. The functions of the first three processes are to detect 1) interior points, 2) borders, and 3) curves, using geometric properties of the neighborhoods generated by a Voronoi tessellation of the dot pattern. The fourth process, that will combine the results of the first three using Gestalt criteria such as smoothness of borders, good continuity, etc., is currently being implemented. The implementation of the fourth process will mark the end of the first phase, with the lowest level perceptual groupings of the dots as the output.

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